1. A high strength flexible fabric structure comprising:

a plurality of flexible fabric sections, each section including a plurality of plies of alternating fiber orientation; and

a joint between adjacent sections wherein the plies of each section are offset to form a uniform thickness seam between the two sections without any overlap of plies of like fiber orientation.

2. The high strength flexible fabric structure of claim 1 in which there are at least three plies in each section.

3. The high strength flexible fabric structure of claim 2 in which a first ply has fibers oriented at 0° and 90°, a second ply has biased fibers, and a third ply has fibers oriented at 0° and 90°.

4. The high strength flexible fabric structure of claim 3 in which the second ply has fibers biased at ±45°.

5. The high strength flexible fabric structure of claim 1 in which the ply fibers are woven.

6. The high strength flexible fabric structure of claim 1 in which the ply fibers are knitted.

7. The high strength flexible fabric structure of claim 1 in which the ply fibers are unidirectional.

8. The high strength flexible fabric structure of claim 1 in which the fibers of each ply are disposed in a flexible matrix material.

9. The high strength flexible fabric structure of claim 8 in which the matrix material is a polyurethane resin material.

10. The high strength flexible fabric structure of claim 1 in which the plies of each section are heat welded together.

11. The high strength flexible fabric structure of claim 1 in which the plies of each section are laminated together.

12. The high strength flexible fabric structure of claim 1 in which the sections are heat welded at the joint.

13. The high strength flexible fabric structure of claim 1 in which the sections are laminated at the joint.

14. The high strength flexible fabric structure of claim 1 in which the structure is a radome surrounding a radar system.

15. The high strength flexible fabric structure of claim 2 in which a first section includes an edge with a first ply thereof extending outward from a second ply which extends outward from a third ply and the adjacent second section has an adjacent edge with a first ply thereof offset inward of a second ply which is offset inward of a third ply such that at the joint between the two sections, the first ply of the first section is disposed on the second ply of the second section, and the second ply of the first section is disposed on the third ply of the second section.

16. The high strength flexible fabric structure of claim 1 in which there are at least three plies in each section, the first ply having fibers oriented at 0° and 90°, the second ply having biased fibers, and the third ply having fibers oriented at 0° and 90° and in which the first section includes an edge with the first ply thereof extending outward from the second ply which extends outward from the third ply and the adjacent second section has an adjacent edge with the first ply thereof offset inward of the second ply which is offset inward of the third ply such that at the joint between the two sections the first ply of the first section is disposed on the second ply of the second section, and the second ply of the first section is disposed on the third ply of the second section.

17. A high strength flexible fabric structure comprising:

a plurality of flexible fabric sections, each section including a plurality of plies, each ply having fibers disposed in a flexible matrix; and

a joint between adjacent first and second sections wherein:

the first section has an edge with a first ply thereof extending outward from a second ply;

the second adjacent section has an edge with a first ply thereof offset inward from a second ply; and

the first ply of the first section is disposed on the second ply of the second section.

18. The high strength flexible fabric structure of claim 17 in which:

the first section further includes a third ply offset inward from the second ply of the first section;

the second adjacent section further includes a third ply extending outward from the second ply of the second section; and

the second ply of the first section is disposed on the third ply of the second section.

19. The high strength flexible fabric structure of claim 18 in which the first ply of each section has fibers oriented at 0° and 90°, the second ply of each section has biased fibers, and the third ply of each section has fibers oriented at 0° and 90°.

20. The high strength flexible fabric structure of claim 19 in which the second ply has fibers biased at ±45°.

21. The high strength flexible fabric structure of claim 17 in which the ply fibers are woven.

22. The high strength flexible fabric structure of claim 17 in which the ply fibers are knitted.

23. The high strength flexible fabric structure of claim 17 in which the ply fibers are unidirectional.

24. The high strength flexible fabric structure of claim 17 in which the flexible matrix is a polyurethane resin material.

25. The high strength flexible fabric structure of claim 17 in which the plies of each section are heat welded together.

26. The high strength flexible fabric structure of claim 17 in which the plies of each section are laminated together.

27. The high strength flexible fabric structure of claim 17 in which the sections are heat welded at the joint.

28. The high strength flexible fabric structure of claim 17 in which the sections are laminated at the joint.

29. The high strength flexible fabric structure of claim 17 in which the structure is a radome surrounding a radar system.

30. A high strength flexible fabric structure comprising:

a plurality of flexible fabric sections, each section including at least three plies, a first ply having fibers oriented at 0° and 90°, a second ply having fibers biased at ±45°, and a third ply having fibers oriented at 0° and 90°; and

a joint between adjacent sections wherein the plies of each section are offset to form a uniform thickness seam between two sections without overlap of plies of like fiber orientation.

31. The high strength flexible fabric structure of claim 30 in which the ply fibers are woven.

32. The high strength flexible fabric structure of claim 30 in which the ply fibers are knitted.

33. The high strength flexible fabric structure of claim 30 in which the ply fibers are unidirectional.

34. The high strength flexible fabric structure of claim 30 in which the structure is a radome surrounding a radar system.

35. A flexible fabric structure with uniform seam thickness comprising:

a first fabric section comprising:

a first ply including a plurality of fibers oriented in a first direction;

a second ply including a plurality of fibers oriented in a second direction;

a third ply comprising a plurality of fibers oriented in the first direction; and

a second fabric section comprising:

a first ply including a plurality of fibers oriented in the first direction;

a second ply including a plurality of fibers oriented in the second direction;

a third ply including a plurality of fibers oriented in the first direction;

wherein a joint between the first and second sections is structured and arranged such that the plies of the first section are in a staggered configuration with the plies of the second section such that the joint has a thickness the same as the thickness of the first and second fabric sections.

36. The fabric structure of claim 35 wherein the first direction is 0° and 90°.

37. The fabric structure of claim 35 wherein the second direction is ±45°.

38. The fabric structure of claim 35 wherein the fibers are disposed in a flexible resin matrix material.

39. A method of manufacturing a high strength flexible fabric structure, the method comprising:

forming a plurality of flexible fabric sections to each include a plurality of plies of alternating fiber orientation;

offsetting the plies of each section; and

joining adjacent sections such that no plies of like fiber orientation overlap.

40. The method of claim 39 in which there are at least three plies in each section.

41. The method of claim 40 in which the first ply has fibers oriented at 0° and 90°, the second ply has biased fibers, and the third ply has fibers oriented at 0° and 90°.

42. The method of claim 41 in which the second ply has fibers biased at ±45°.

43. The method of claim 39 in which forming the flexible fabric sections includes weaving the ply fibers.

44. The method of claim 39 in which forming the flexible fabric sections includes disposing the fibers of each ply in a flexible matrix material.

45. The method of claim 44 in which the matrix material is a polyurethane

resin material.

46. The method of claim 39 in which joining of the sections includes heat welding the plies of each section together.

47. The method of claim 39 in which joining of the sections includes laminating the plies of each section together.

48. The method of claim 39 in which joining of the sections includes heat welding the sections at the joint.

49. The method of claim 39 in which joining of the sections includes laminating the sections at the joint.

50. The method of claim 39 further including the step of configuring the flexible fabric sections as a radome covering.

51. The method of claim 40 in which offsetting includes extending a first ply of a first section outward from a second ply thereof and extending the second ply outward from a third ply thereof and offsetting a first ply of the second section inward from a second ply thereof and offsetting the second ply thereof inward from a third ply thereof.

52. The method of claim 51 in which joining includes disposing the first ply of

the first section on the second ply of the second section and disposing the second ply of the first section on the third ply of the second section.

53. A method of producing a fabric structure of uniform thickness, the method comprising:

forming a plurality of fabric sections; and

structuring and arranging each section to abut and join an adjacent section without any overlap between the sections and forming a fabric structure of uniform thickness.

54. A method for producing a flexible fabric structure of uniform thickness, the method comprising:

forming a first flexible fabric portion with a first ply of flexible fabric including a plurality of fibers oriented at 0° and 90°, a second ply of flexible fabric including a plurality of fibers oriented at ±45°, and a third ply of flexible fabric including a plurality of fibers oriented at 0° and 90°,

stacking the first, second, and third plies; and

joining the first, second, and third plies with like oriented plies of a second flexible fabric portion in an offset configuration and forming a uniform thickness seam.

55. A high strength flexible fabric seam comprising:

at least two flexible fabric sections, each section including a plurality of plies of alternating fiber orientation, wherein the plies of each section are offset and joined without any overlap of plies of like fiber orientation.

56. The high strength flexible fabric seam of claim 55 in which there are at least three plies in each section.

57. The high strength flexible fabric seam of claim 56 in which the first ply has fibers oriented at 0° and 90°, the second ply has biased fibers, and the third ply has fibers oriented at 0° and 90°.

58. The high strength flexible fabric seam of claim 57 in which the second ply has fibers biased at ±45°.

59. The high strength flexible fabric seam of claim 55 in which the ply fibers are woven.

60. The high strength flexible fabric seam of claim 55 in which the ply fibers are knitted.

61. The high strength flexible fabric seam of claim 55 in which the ply fibers are unidirectional.

62. The high strength flexible fabric seam of claim 55 in which the fibers of each ply are disposed in a flexible matrix material.

63. The high strength flexible fabric seam of claim 62 in which the matrix material is a polyurethane resin material.

64. The high strength flexible fabric seam of claim 55 in which the plies of each section are heat welded together.

65. The high strength flexible fabric seam of claim 55 in which the plies of each section are laminated together.

66. The high strength flexible fabric seam of claim 55 in which the sections are heat welded together.

67. The high strength flexible fabric seam of claim 55 in which the sections are laminated together.

68. The high strength flexible fabric seam of claim 56 in which a first section includes an edge with the first ply thereof extending outward from the second ply which extends outward from the third ply and the adjacent second section has an adjacent edge with the first ply thereof offset inward of the second ply which is offset inward of the third ply such that the first ply of the first section is disposed on the second ply of the

second section, and the second ply of the first section is disposed on the third ply of the second section.

69. The high strength flexible fabric seam of claim 55 in which there are at least three plies in each section, the first ply having fibers oriented at 0° and 90°, the second ply having biased fibers, and the third ply having fibers oriented at 0° and 90° in which a first section includes an edge with the first ply thereof extending outward from the second ply which extends outward from the third ply and the adjacent second section has an adjacent edge with the first ply thereof offset inward of the second ply which is offset inward of the third ply such that the first ply of the first section is disposed on the second ply of the second section, and the second ply of the first section is disposed on the third ply of the second section.

70. A high strength flexible fabric seam comprising:

at least two flexible fabric sections, each section including a plurality of plies, each ply having fibers disposed in a flexible matrix wherein the first section has an edge with a first ply thereof extending outward from a second ply;

the second adjacent section has an edge with a first ply thereof offset inward from a second ply; and

the first ply of the first section is disposed on the second ply of the second section.

71. The high strength flexible fabric seam of claim 70 in which:

the first section includes a third ply offset inward from the second ply of the first section;

the second adjacent section includes a third ply extending outward from the second ply of the second section; and

the second ply of the first section is disposed on the third ply of the second section.

72. The high strength flexible fabric seam of claim 71 in which the first ply of each section has fibers oriented at 0° and 90°, the second ply has biased fibers, and the third ply has fibers oriented at 0° and 90°.

73. A flexible fabric seam with uniform thickness comprising:

a first fabric section comprising:

a first ply including a plurality of fibers oriented in a first direction;

a second ply including a plurality of fibers oriented in a second direction;

a third ply comprising a plurality of fibers oriented in the first direction; and

a second fabric section comprising:

a first ply including a plurality of fibers oriented in the first direction;

a second ply including a plurality of fibers oriented in the second direction;

a third ply including a plurality of fibers oriented in the first direction;

wherein the plies of the first section are in a staggered configuration with and joined with the plies of the second section such that the seam has a thickness equal to a combined thickness of the first, second, and third layers of the first and second fabric sections.

74. A method of manufacturing a high strength flexible fabric seam, the method comprising:

forming a plurality of flexible fabric sections to each include a plurality of plies of alternating fiber orientation;

offsetting the plies of each section; and

joining adjacent sections such that no plies of like fiber orientation overlap.

75. The method of claim 74 in which offsetting includes extending the first ply of a first section outward from the second ply thereof and extending the second ply outward from the third ply thereof and offsetting the first ply of the second section inward from the second ply thereof and offsetting the second ply thereof inward from the third ply thereof.

76. The method of claim 75 in which joining includes disposing the first ply of the first section on the second ply of the second section and disposing the second ply of the first section on the third ply of the second section.

77. A method of manufacturing a high strength flexible fabric seam, the method comprising:

forming a plurality of flexible fabric sections to each include at least three of plies of alternating fiber orientation;

offsetting the plies of each section;

joining adjacent sections such that no plies of like fiber orientation overlap;

weaving the ply fibers; and

disposing the fibers of each ply in a flexible matrix material.

78. A radome structure comprising:

a plurality of flexible fabric sections, each section including a plurality of plies of alternating fiber orientation; and

a joint between adjacent sections wherein the plies of each section are offset to form a uniform thickness seam between the two sections without any overlap of plies of like fiber orientation.